

9



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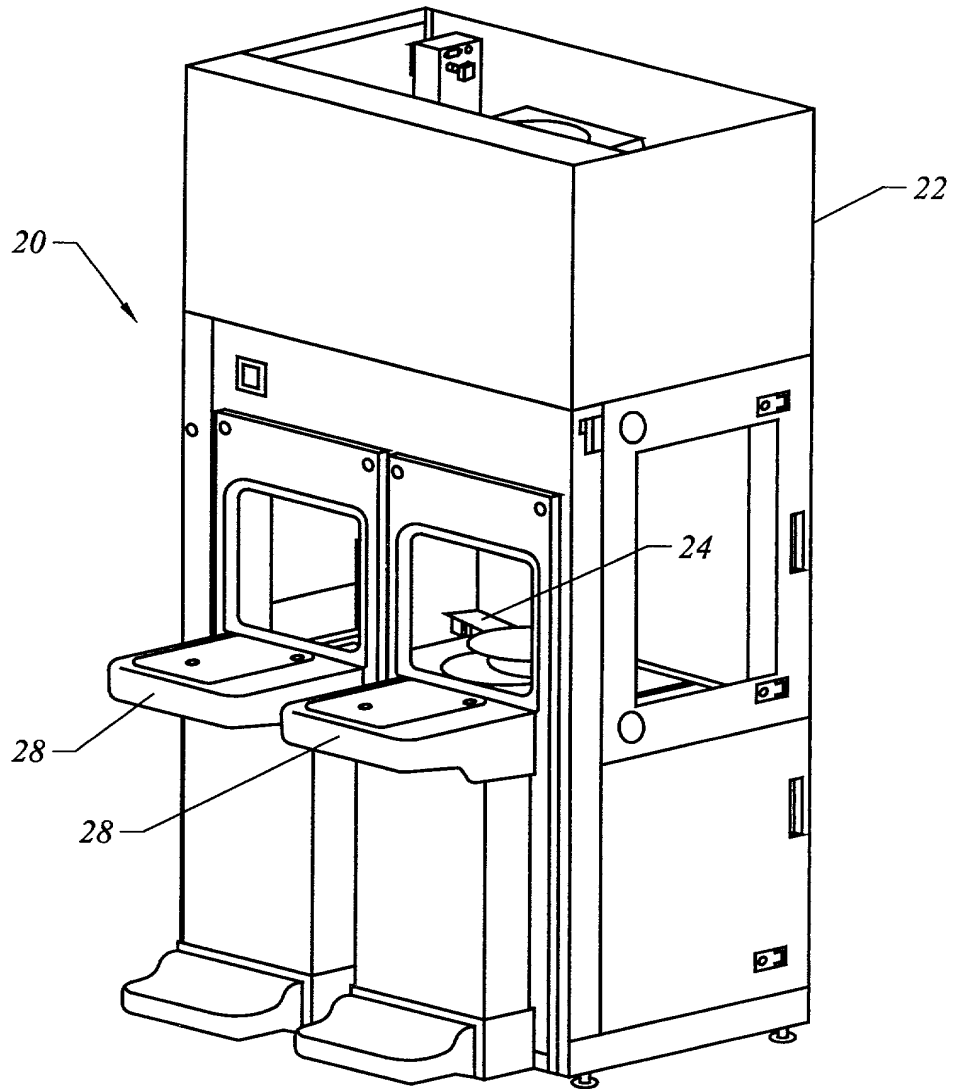
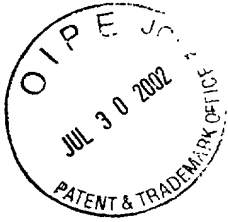


FIG. 1

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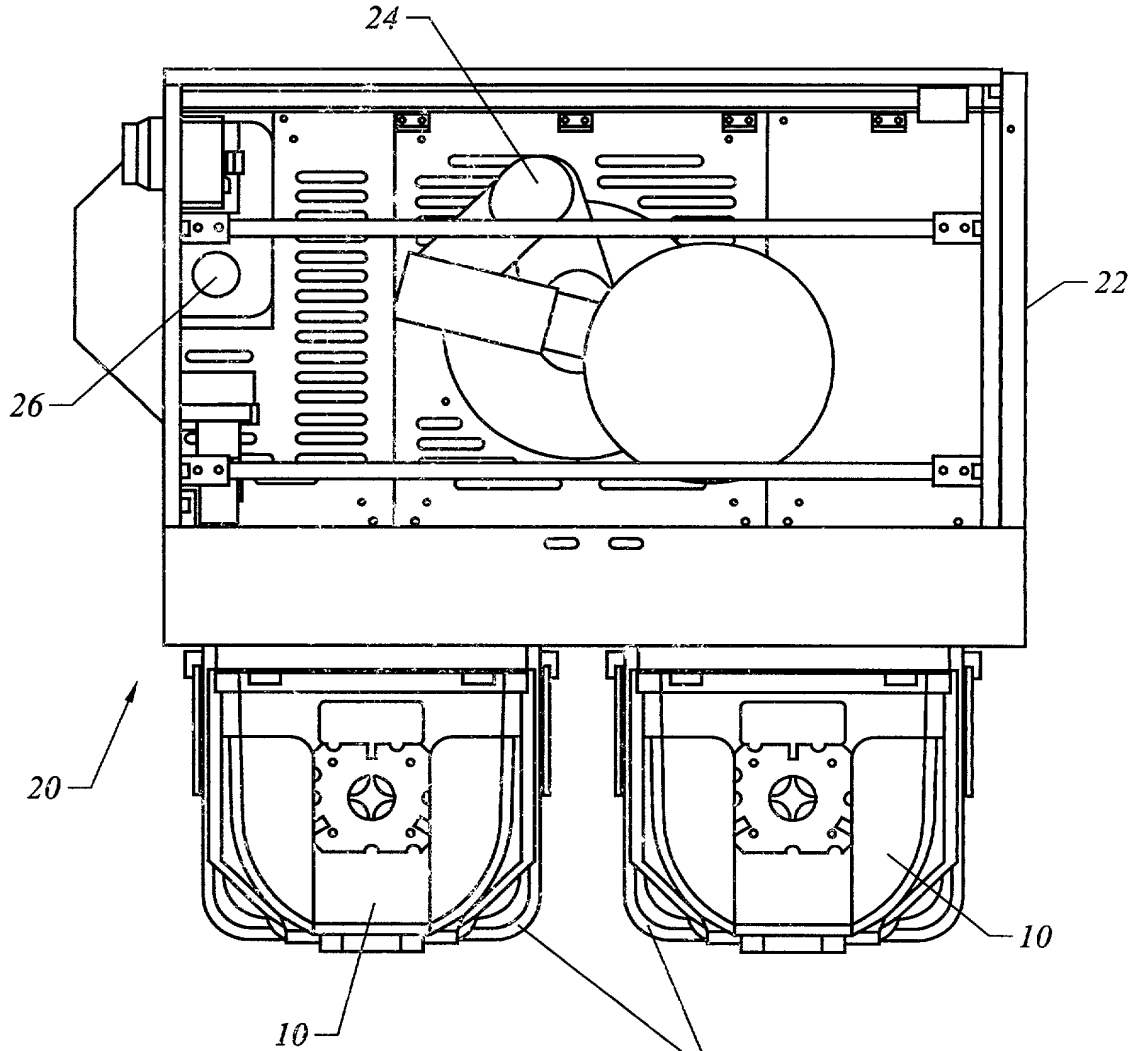


FIG. 2



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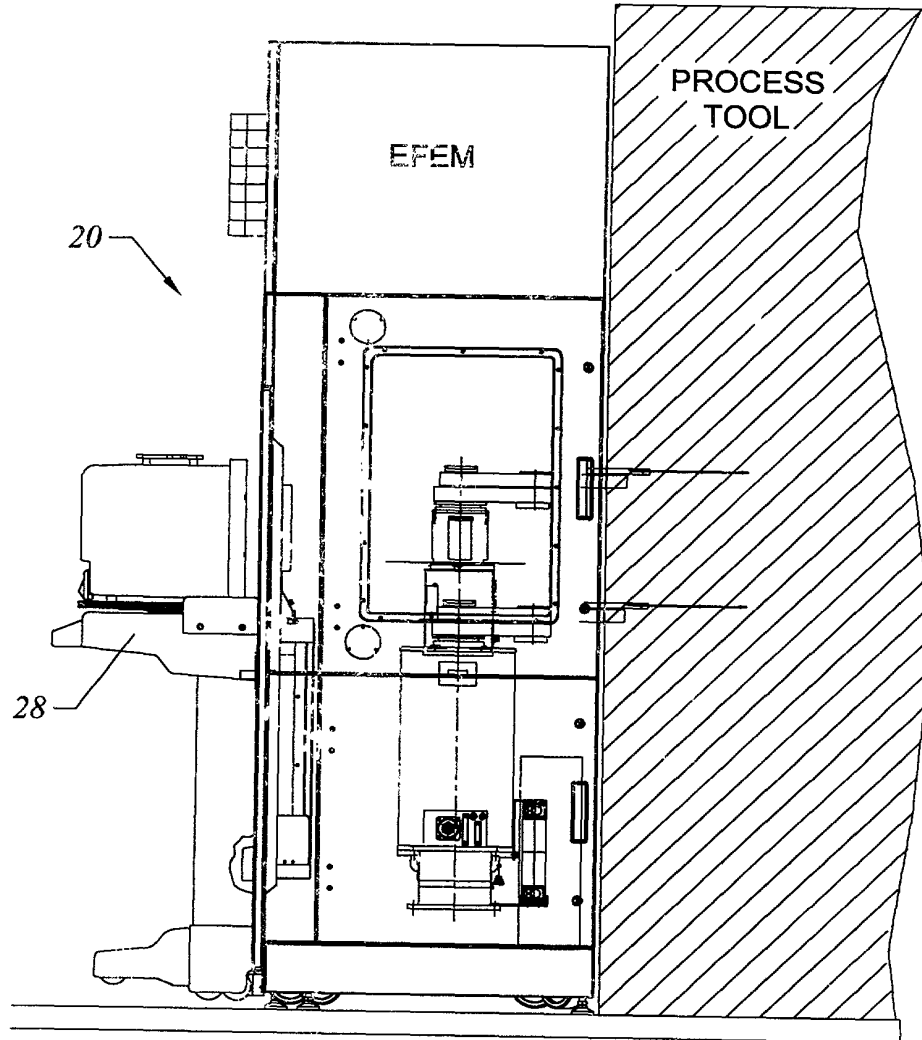


FIG. 3

200240 26048001



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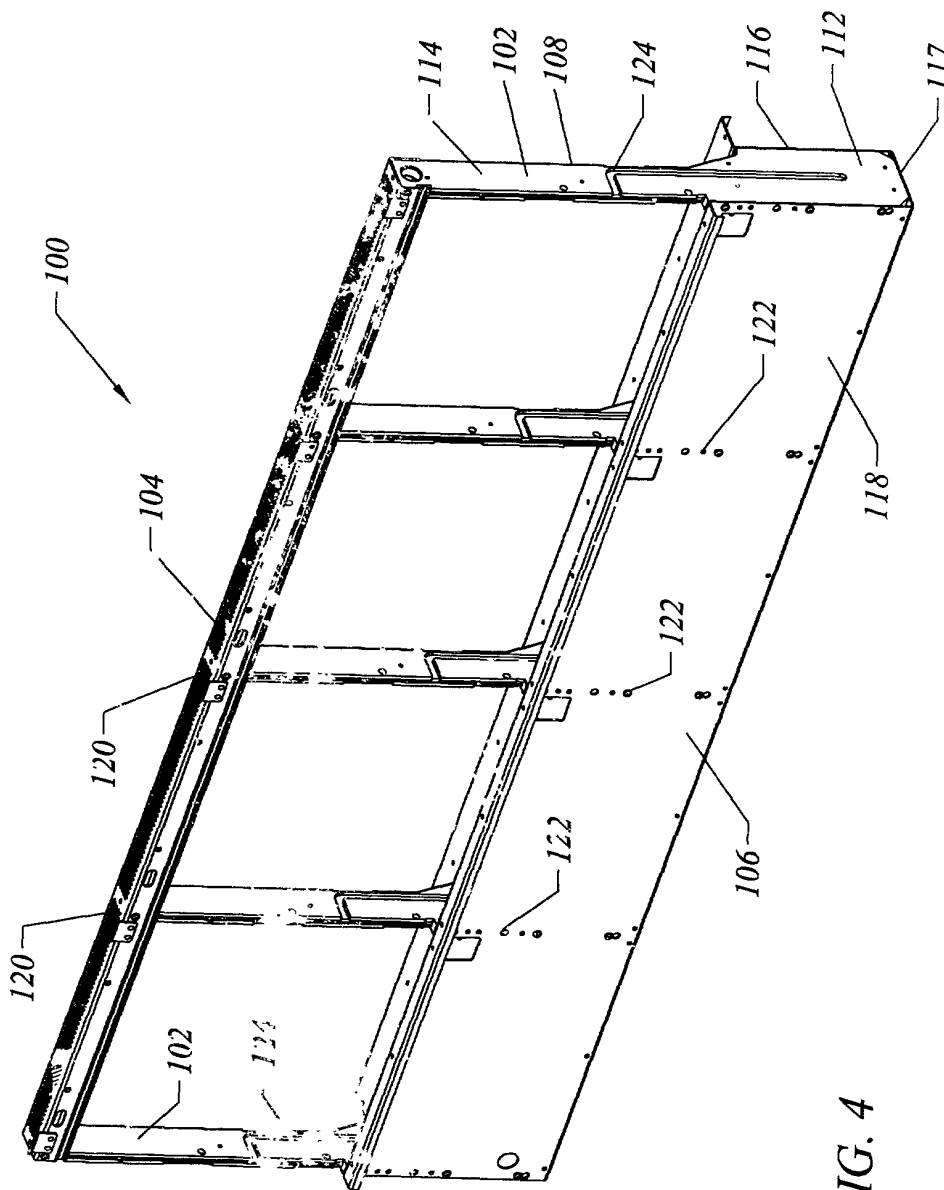


FIG. 4



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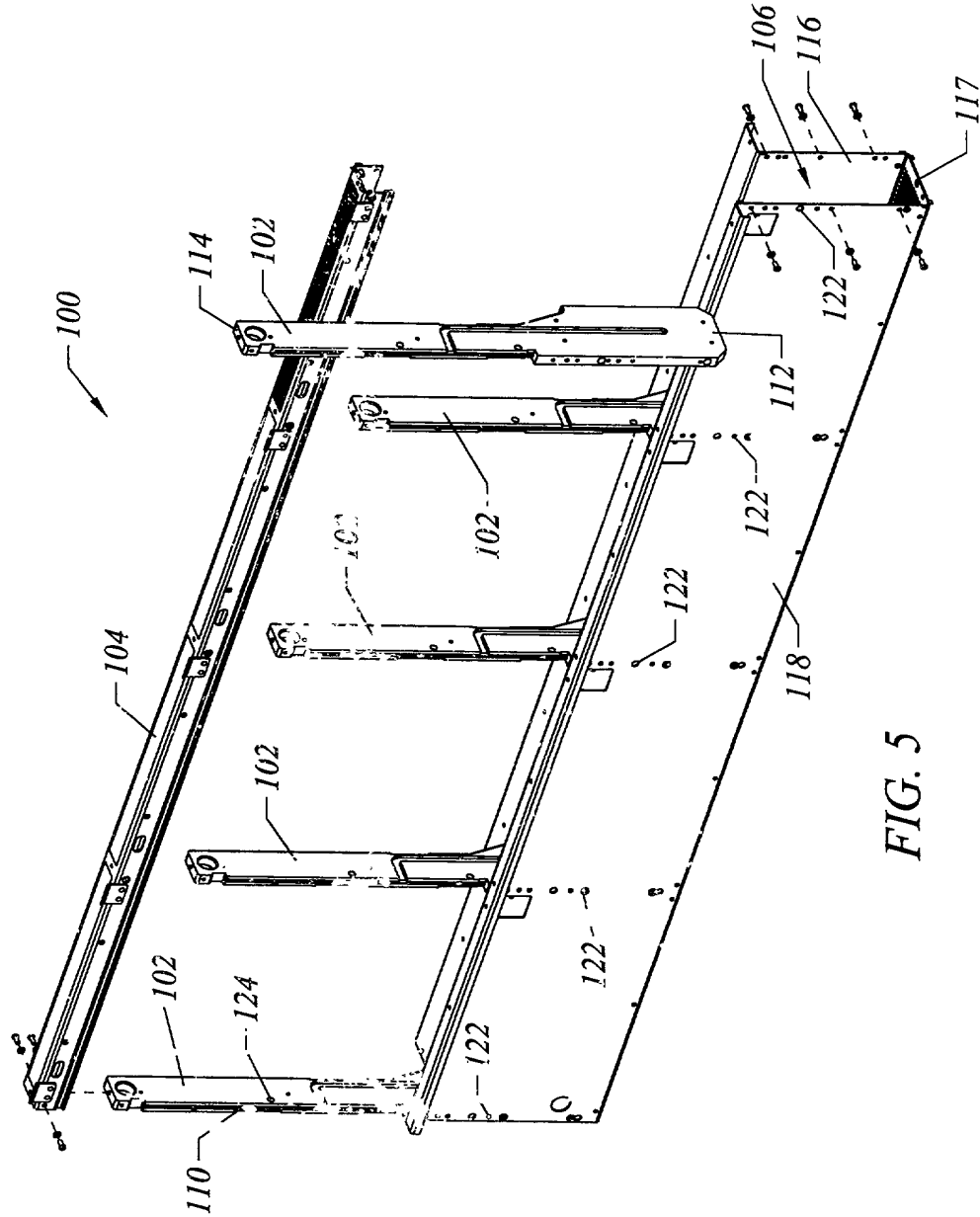


FIG. 5

200620 26043001



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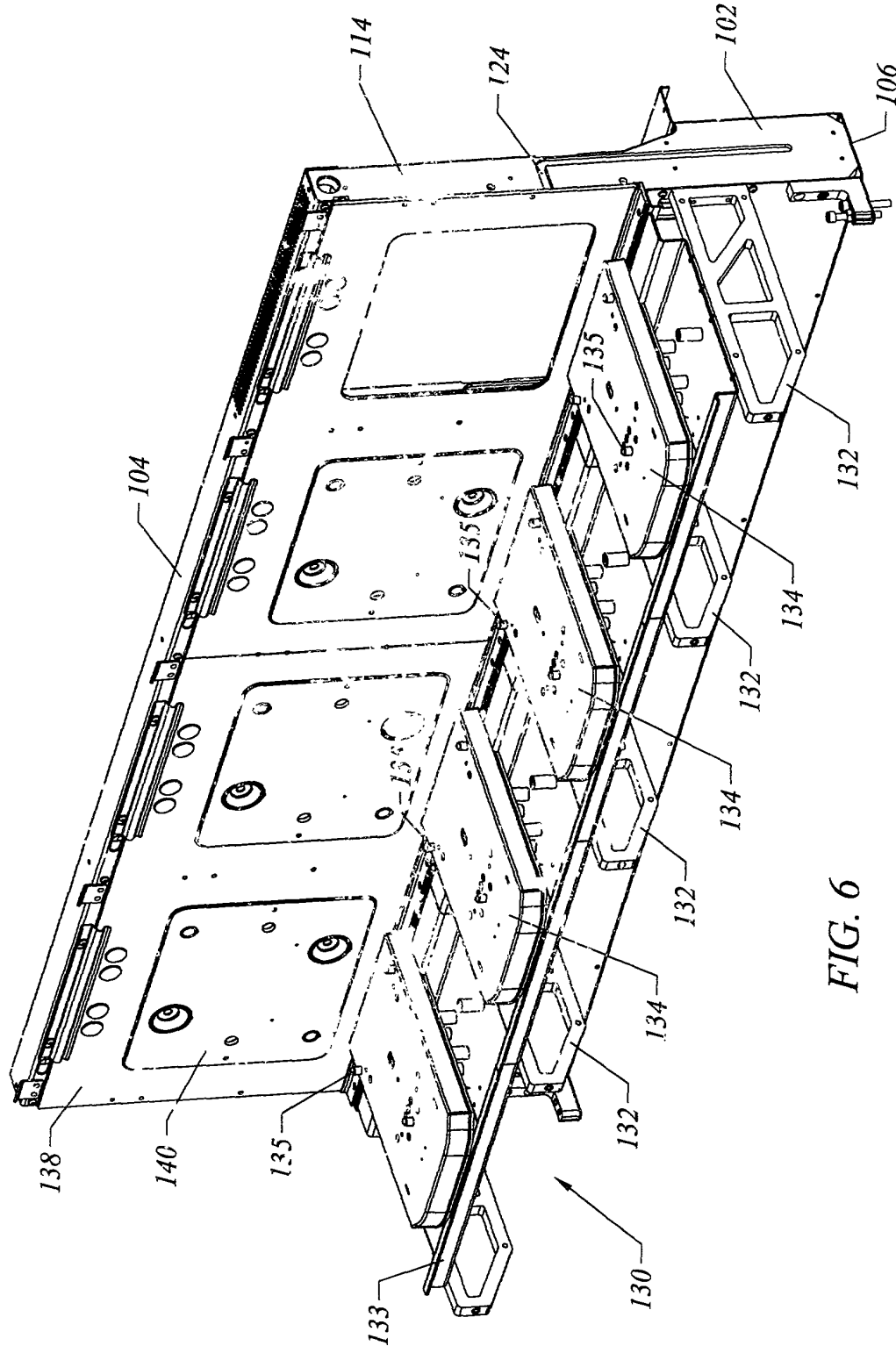


FIG. 6

200E20 2602800X



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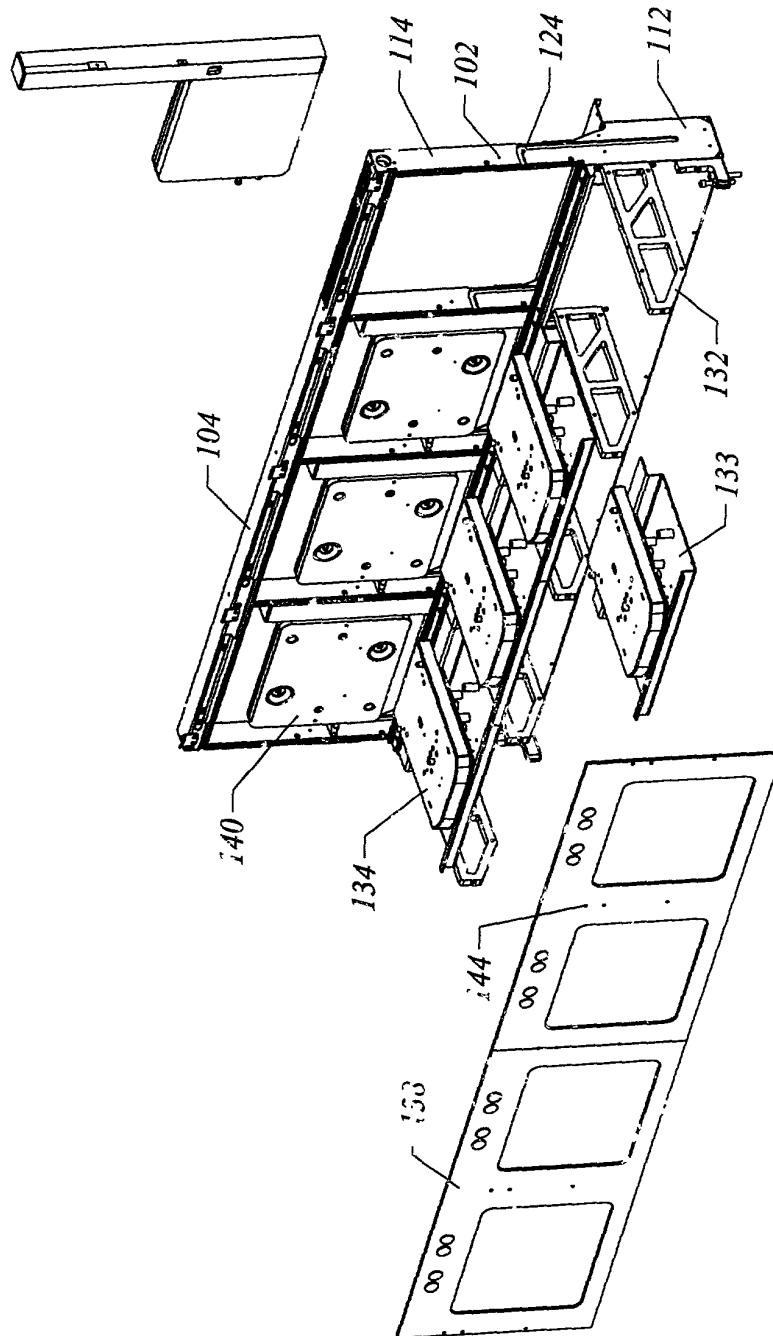


FIG. 7

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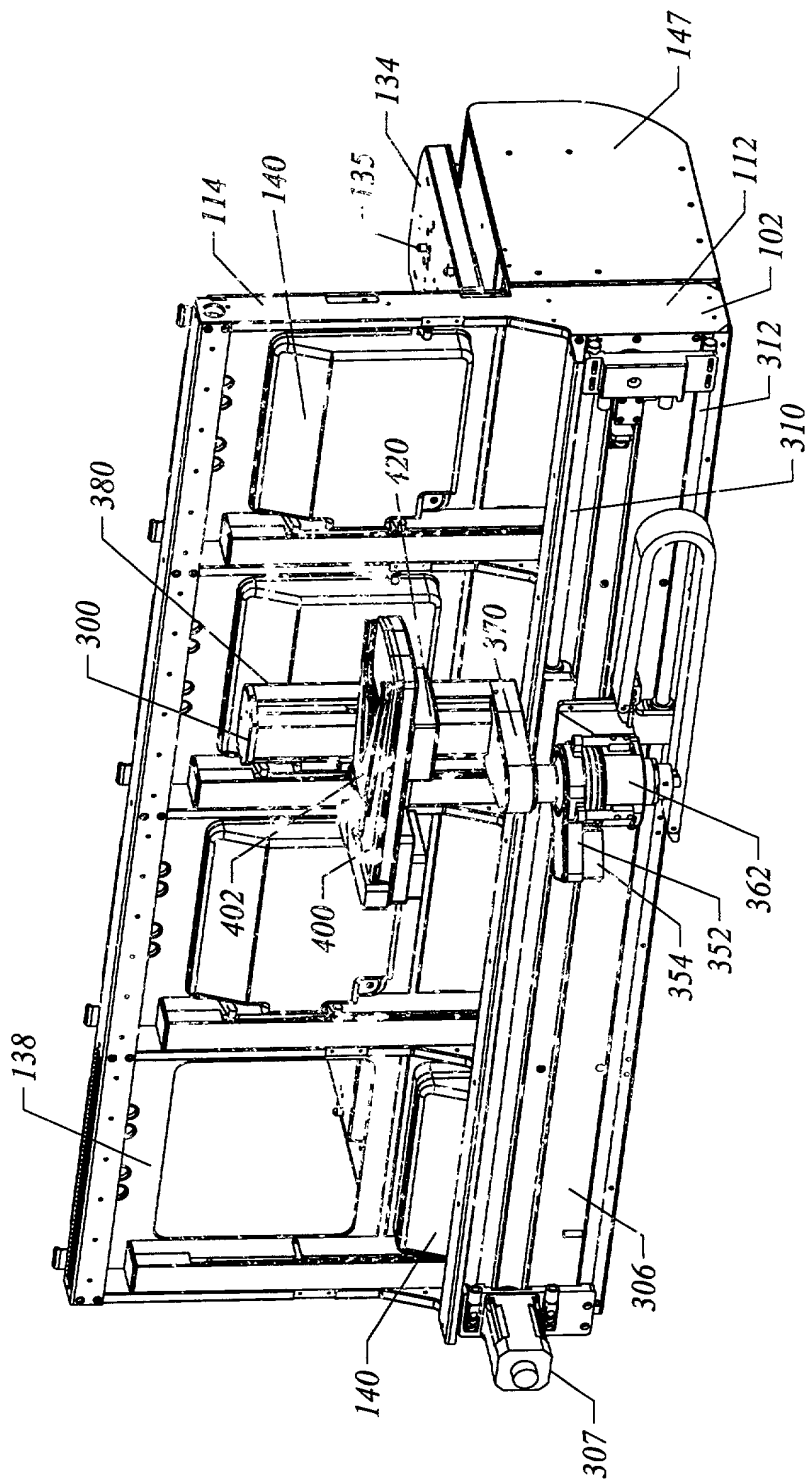


FIG. 8



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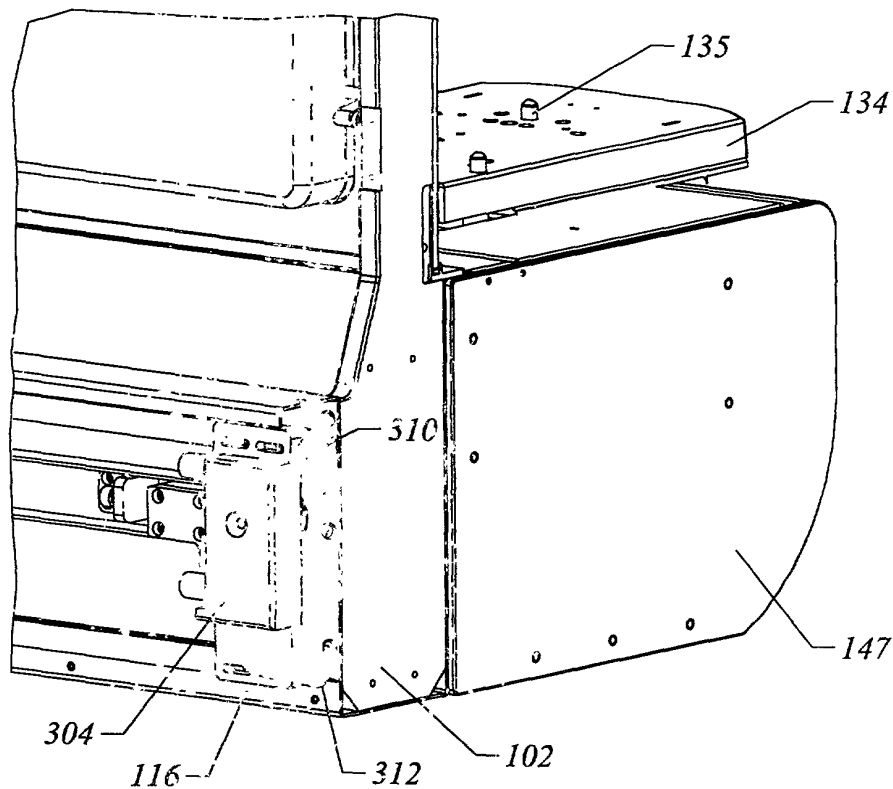


FIG. 9

10087092 07000

2002/03/26 04:30:01



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Title: SEMICONDUCTOR MATERIAL HANDLING SYSTEM
Inventor: Anthony C. Bonora Docket No.: 34741-774
Serial No.: 10/087,092 Attorney: Scott D. Sanford
Filed: March 1, 2002 Telephone: 415-984-8700
Sheet 10 of 34

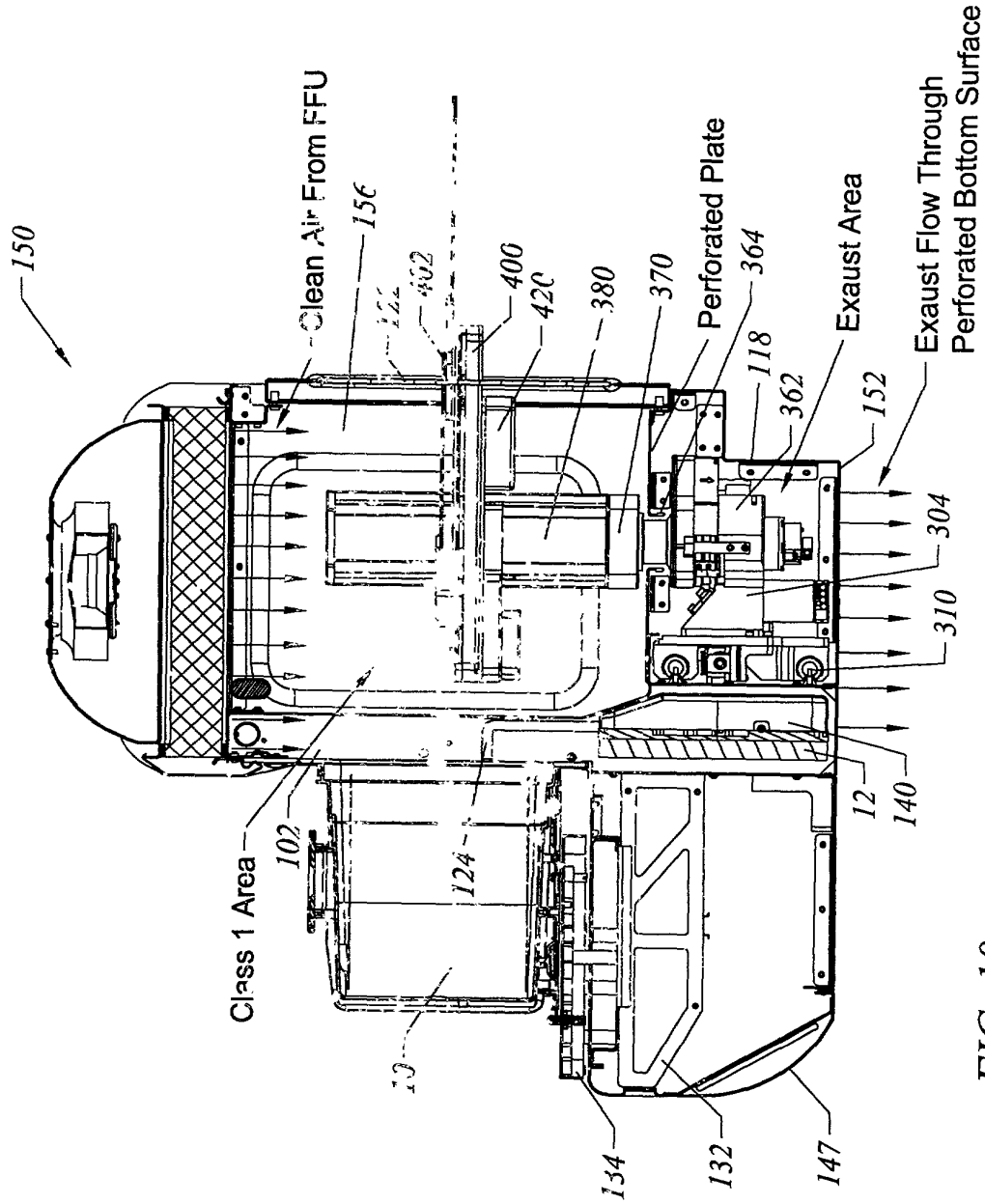


FIG. 10



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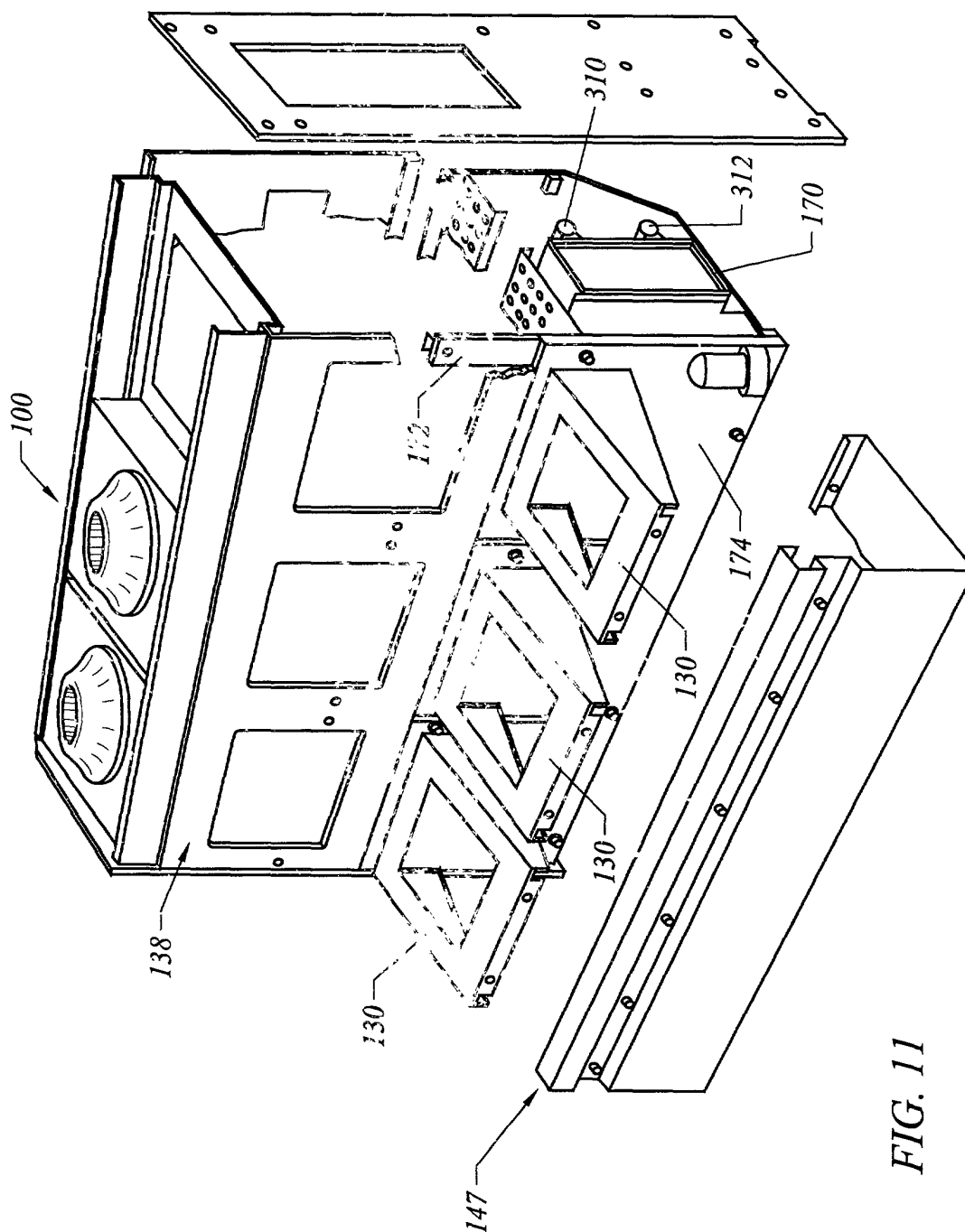


FIG. 11

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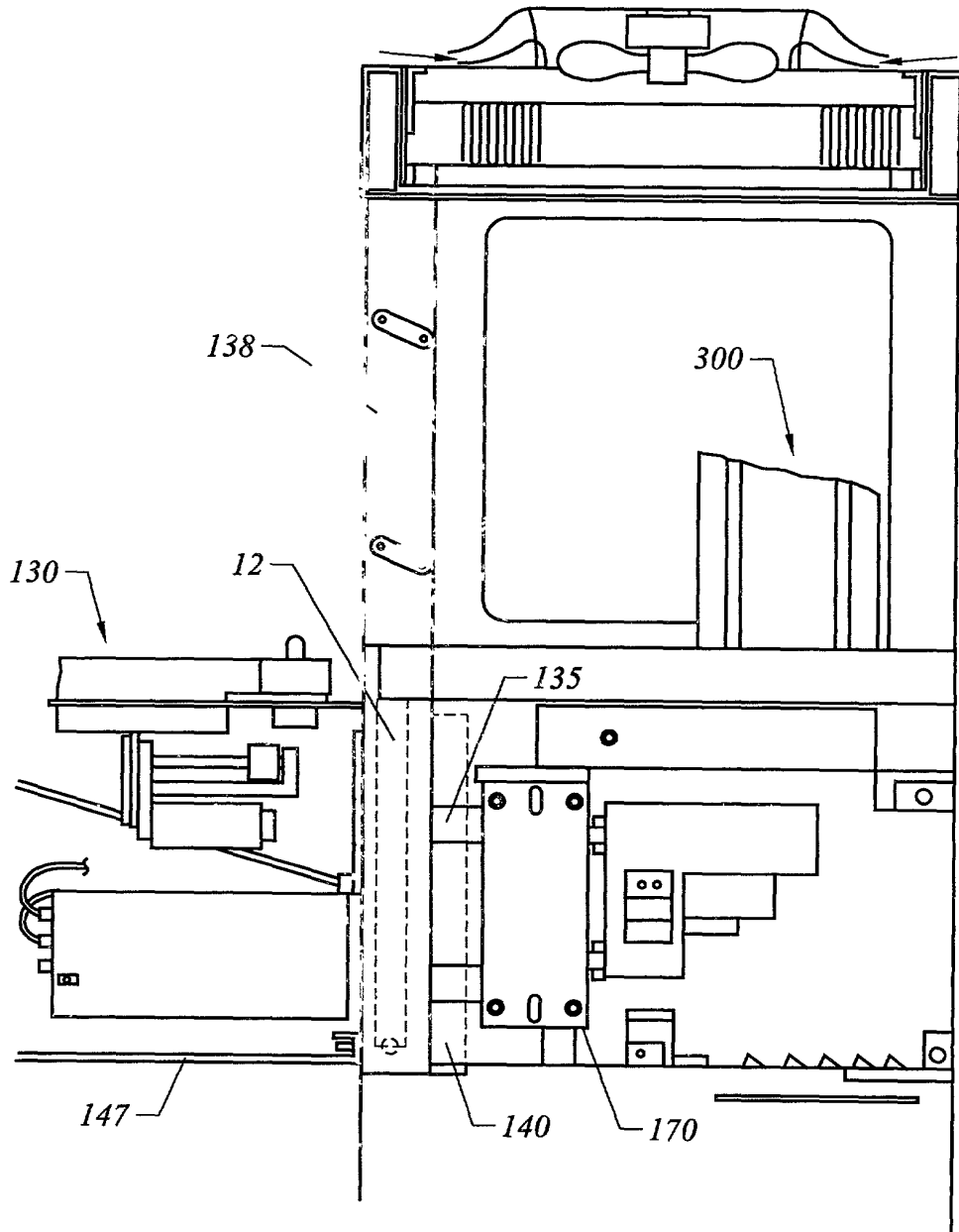


FIG. 12

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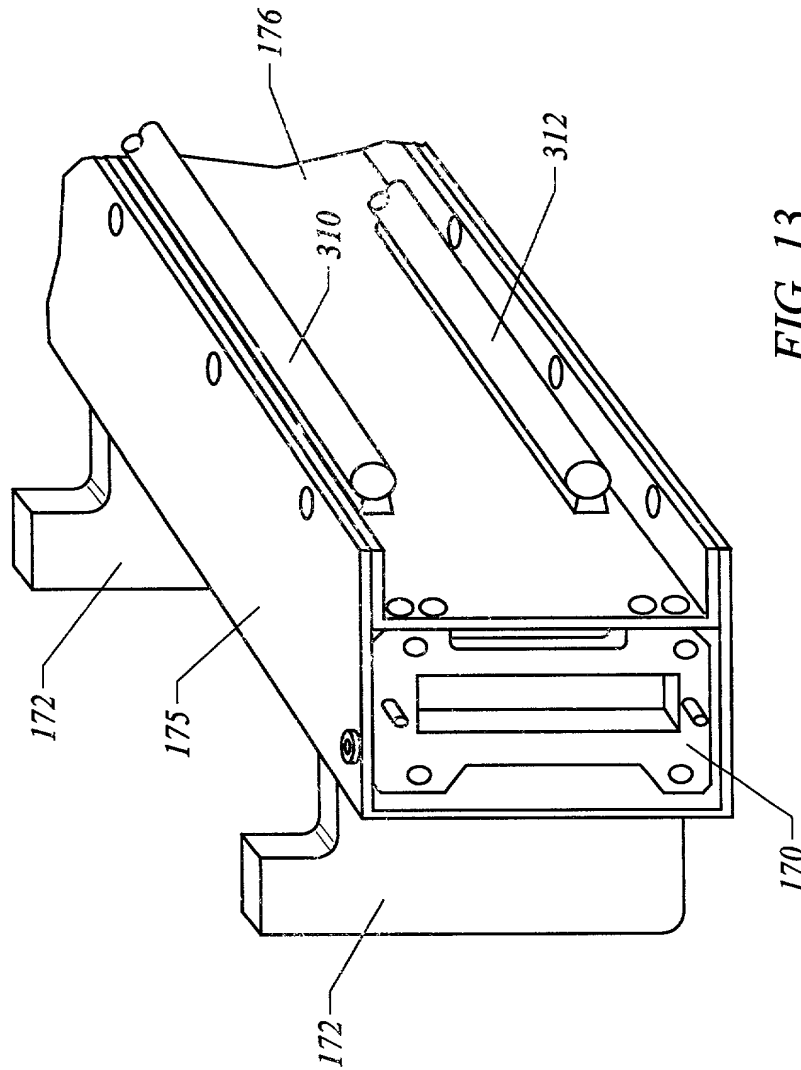


FIG. 13

20020326043001

FIG. 14 is a perspective view of a portable electronic device, such as a PDA, with its cover open. The device includes a main body (220) with a display (222) and a keypad (224). The keypad (224) is shown in an exploded view, revealing internal components like a spring (212) and a switch (210). A separate keypad assembly (234) is also shown, which includes a keypad (230) and a cover (232). The main body (220) has a hinge (202) and a latch (206). The keypad assembly (234) has a latch (204) and a hinge (208).

FIG. 14

REPORT



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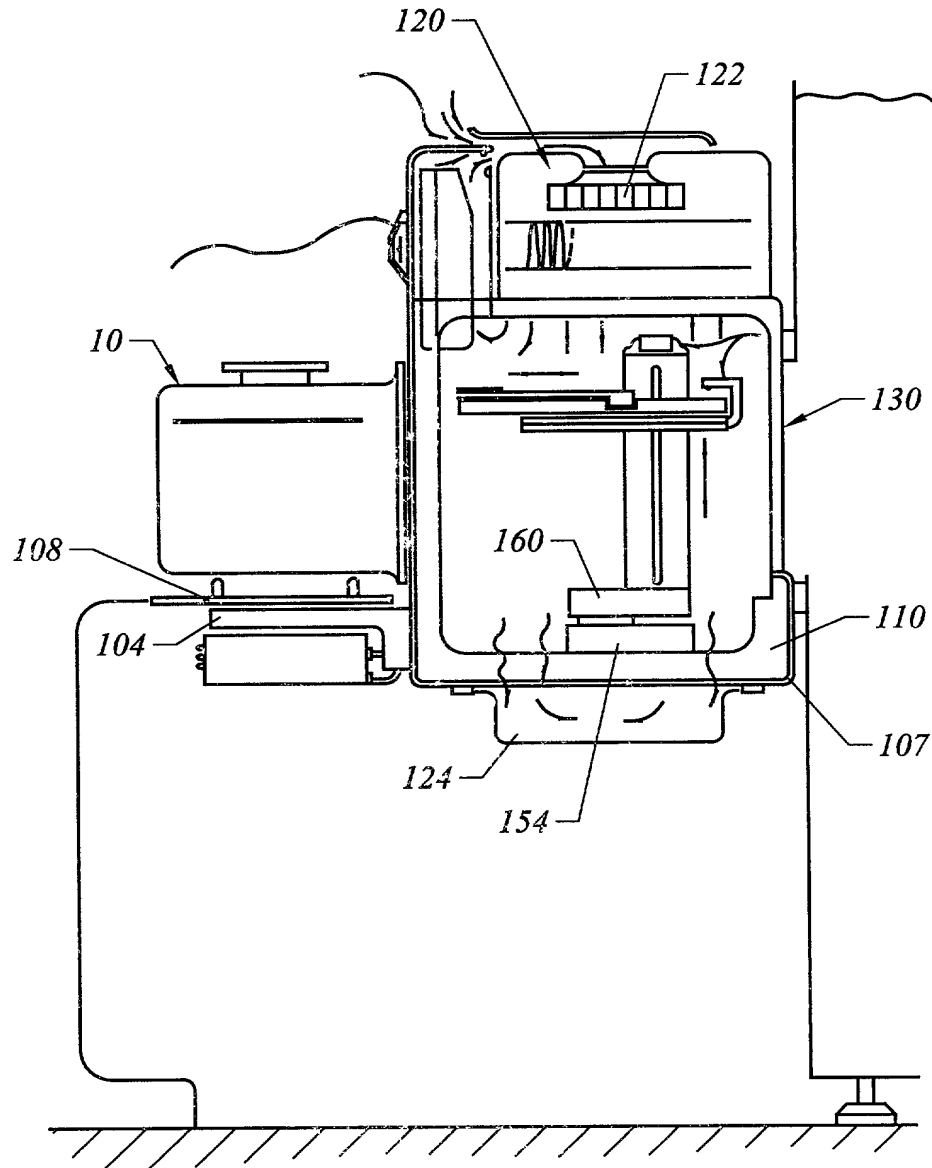


FIG. 15

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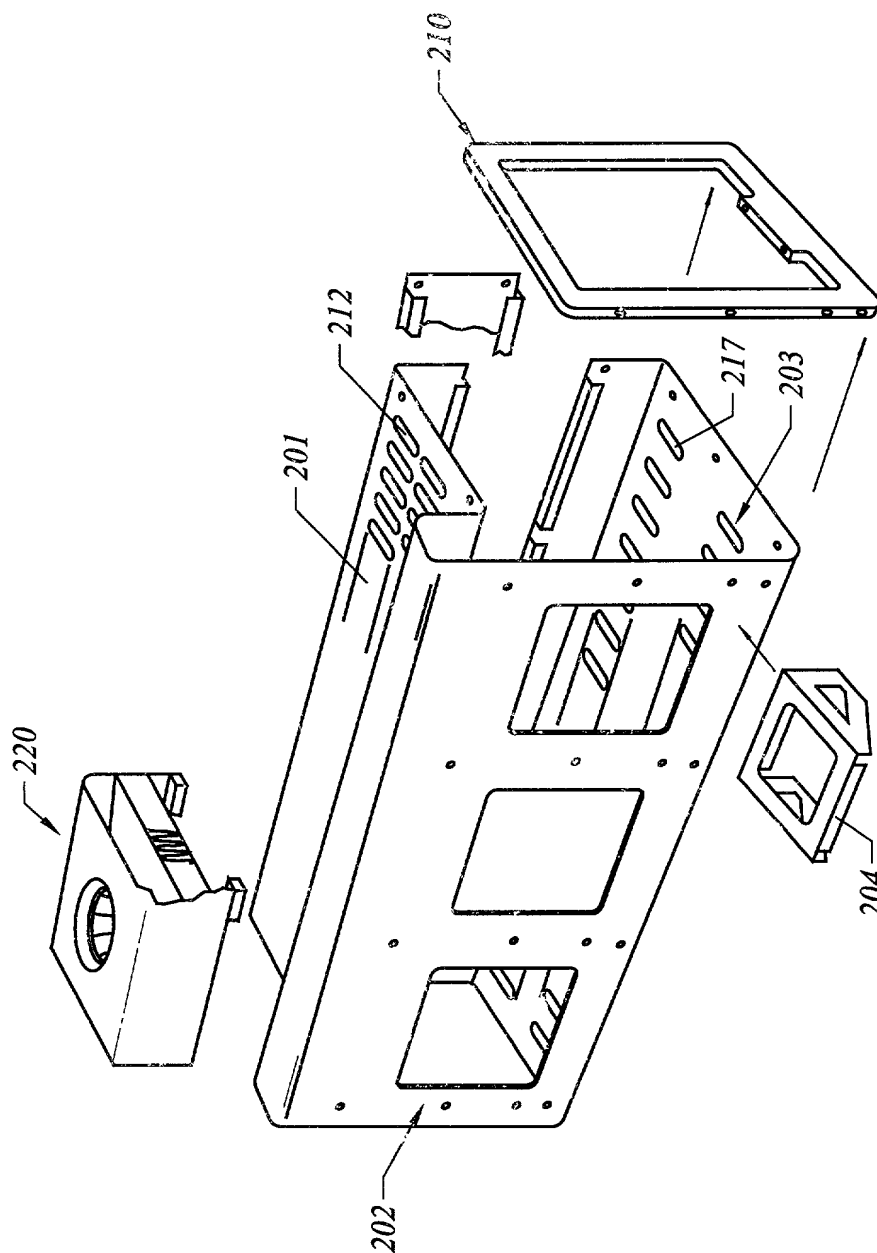


FIG. 16

200E40" 2604800K



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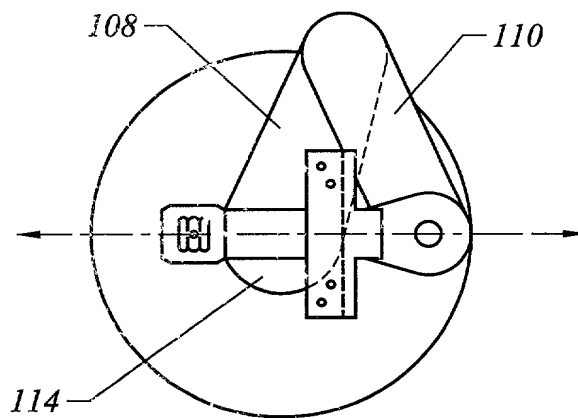


FIG. 17A
(Prior Art)

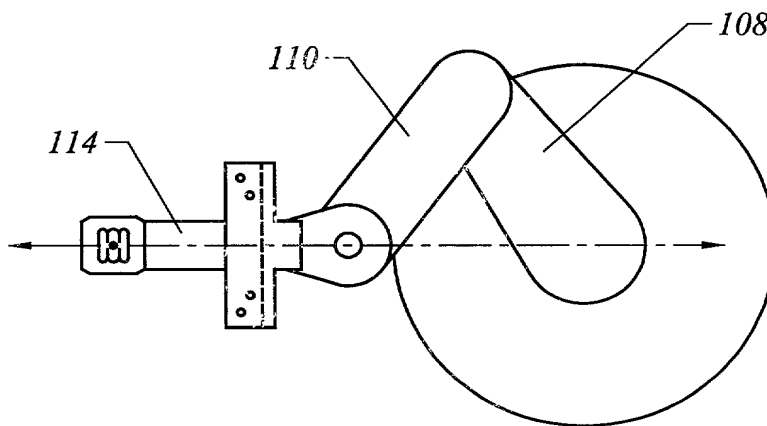
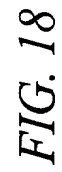
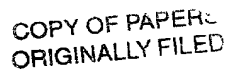


FIG. 17B
(Prior Art)

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DRAFT



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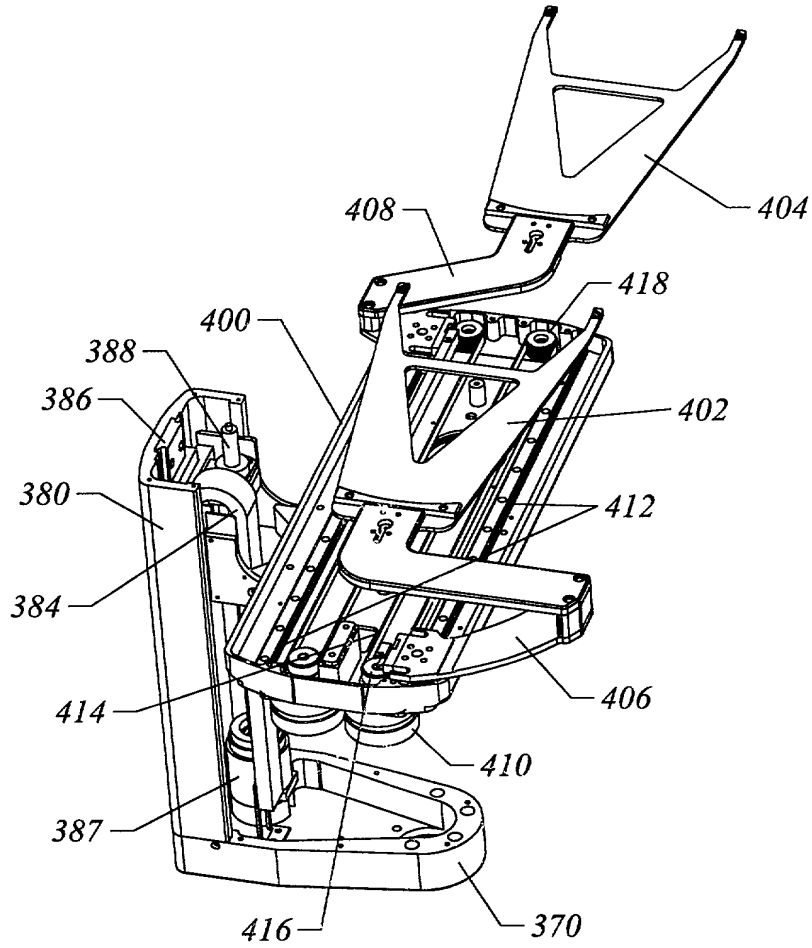


FIG. 19



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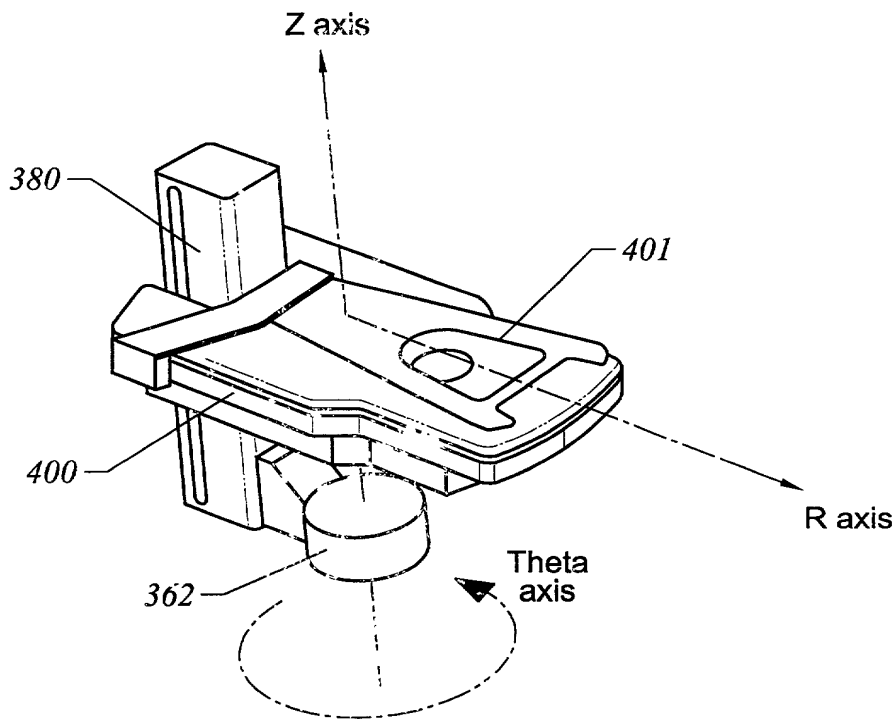


FIG. 20

1002002-073002



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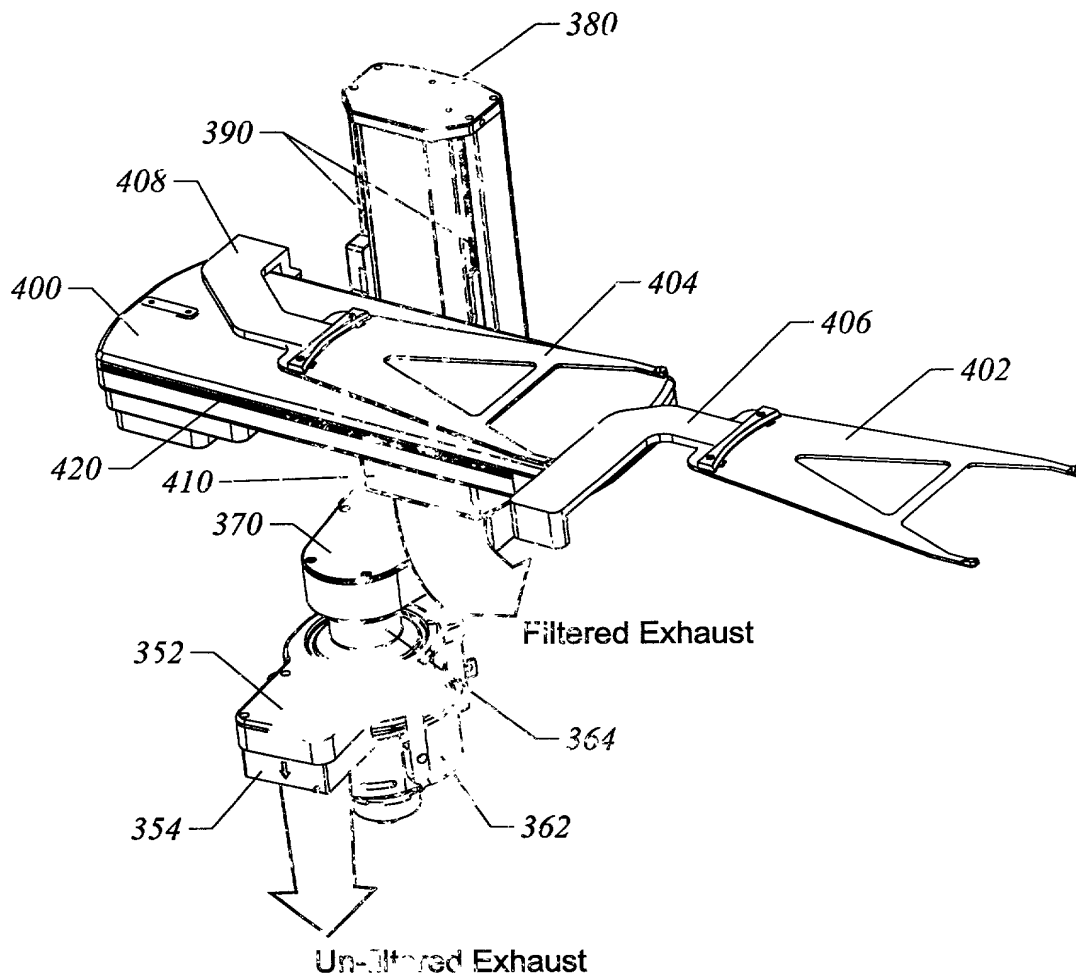


FIG. 21

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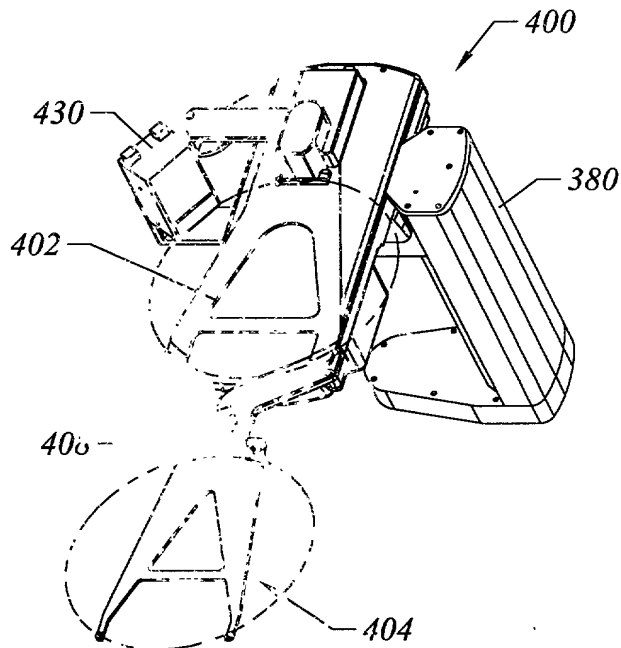


FIG. 22A

10087092, 073002



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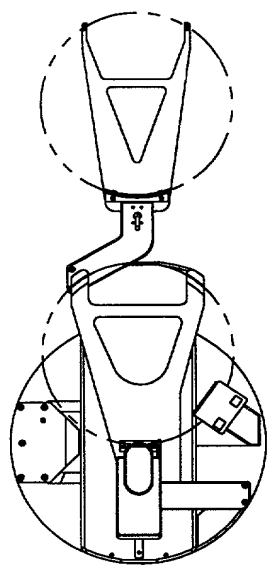


FIG. 22B

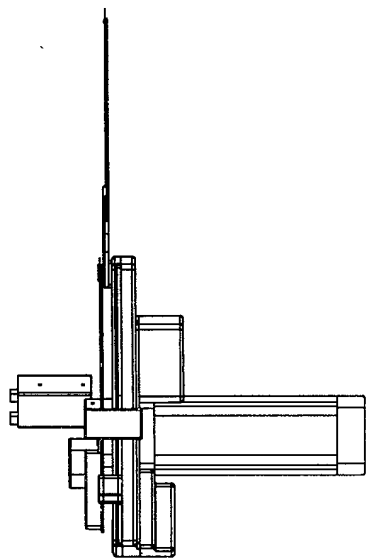


FIG. 22C

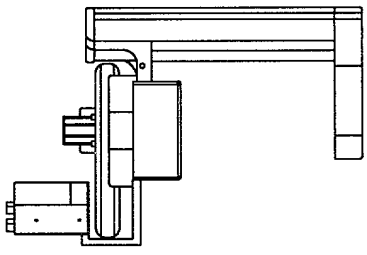


FIG. 22D

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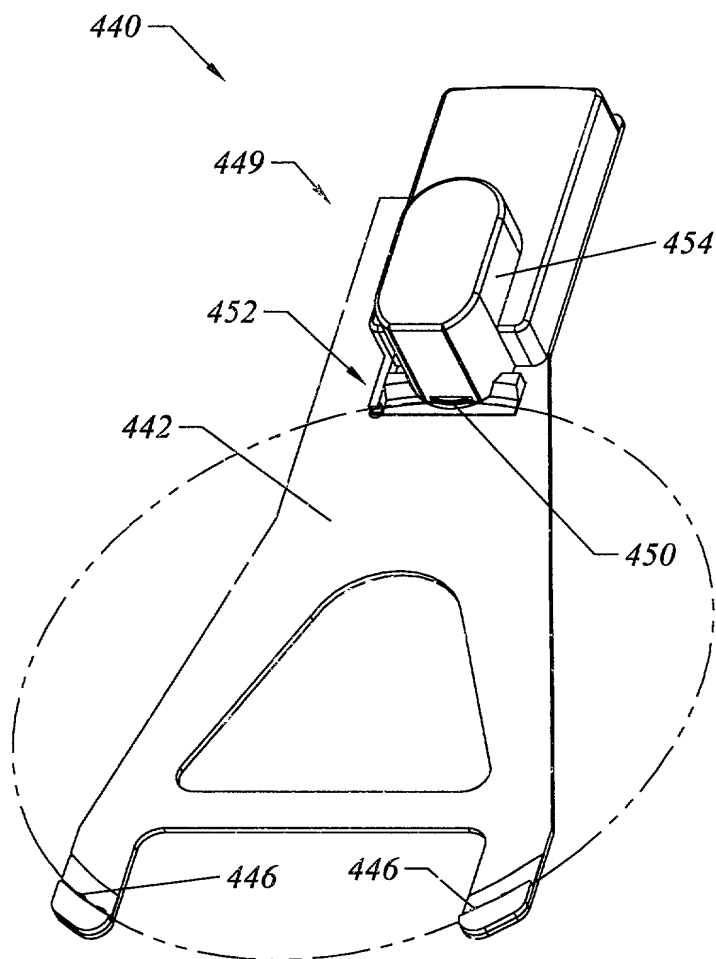


FIG. 23

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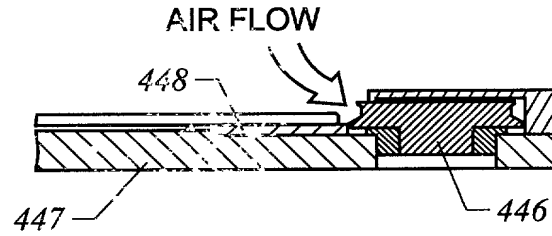


FIG. 24A

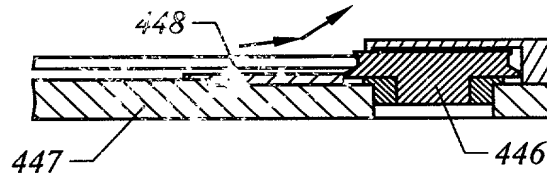


FIG. 24B

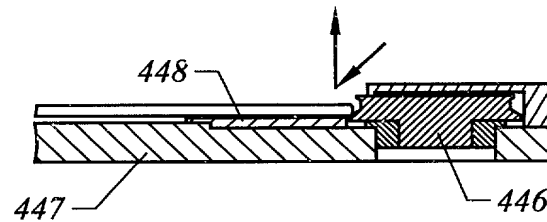


FIG. 24C

10087092-073002



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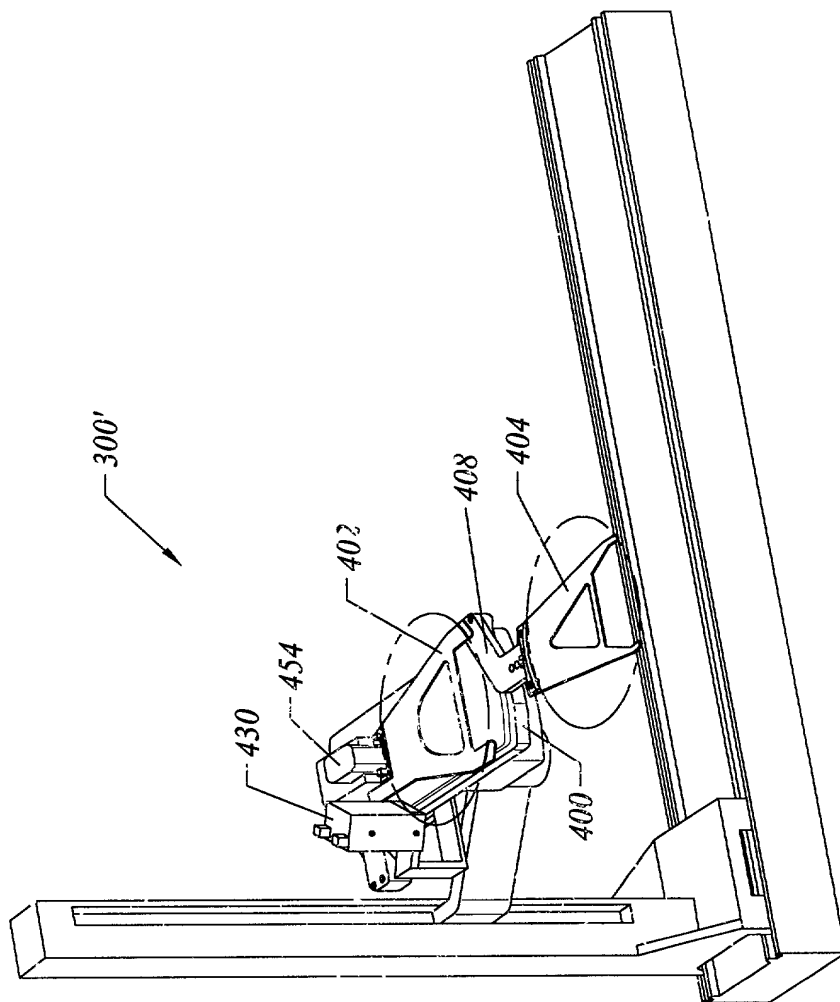


FIG. 25

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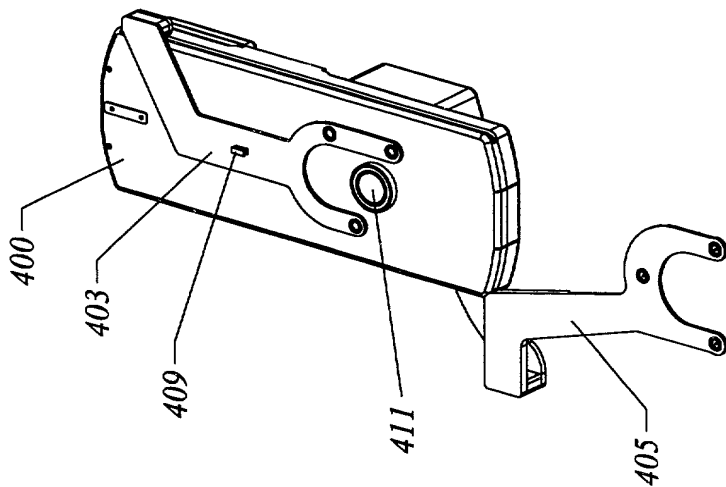


FIG. 26B

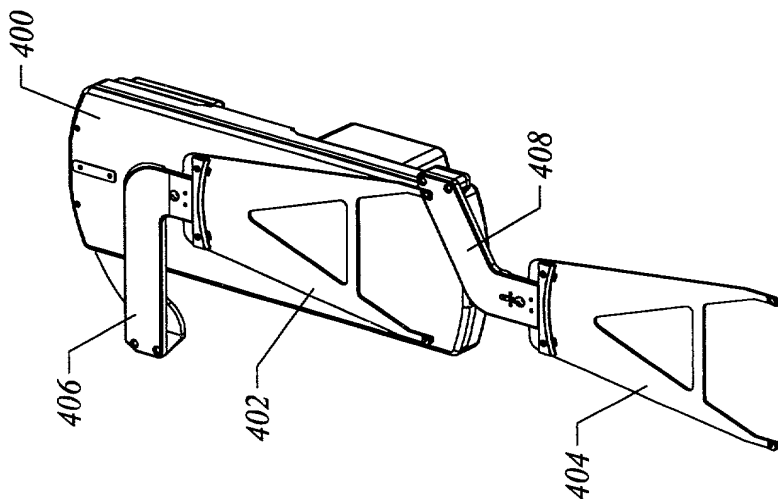


FIG. 26A

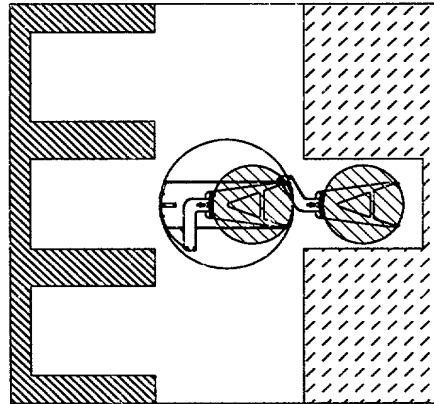
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2006/07/20 2006/07/20

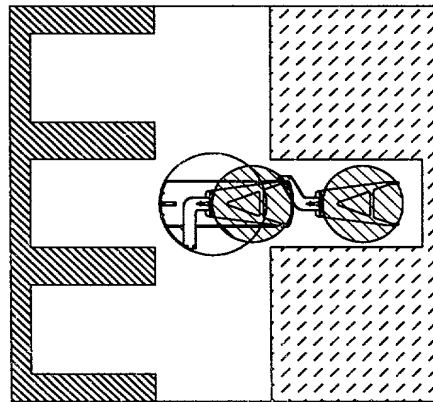


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Conventional Linear Slide Robot



Off-Center Side-Body (50mm offset)



EFEM Process Tool

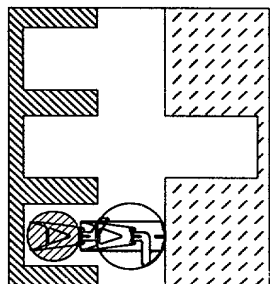
FIG. 27A

FIG. 27B



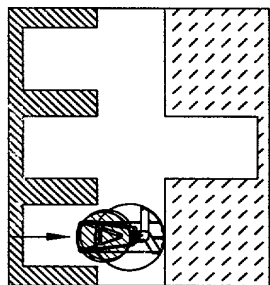
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Example motion sequence for rapid swap slide-body with off center rotation axis.



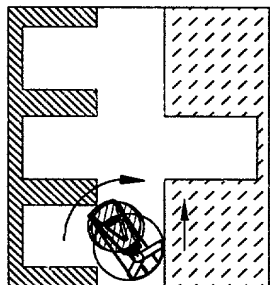
lift wafer at
load port 1

FIG. 28-1



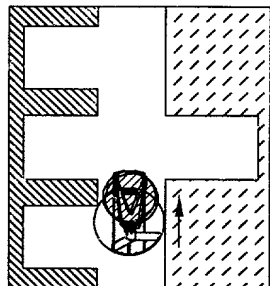
retract radial axis

FIG. 28-2



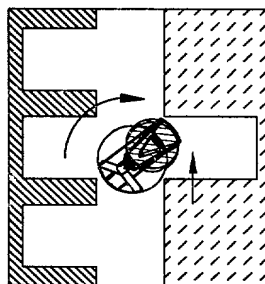
rotate theta axis
and move X axis
back to avoid
collision

FIG. 28-3



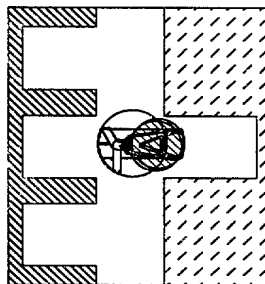
move X axis
forward toward
process station

FIG. 28-4



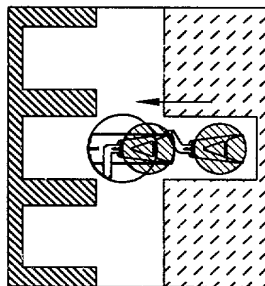
rotate theta axis
and move X axis

FIG. 28-5



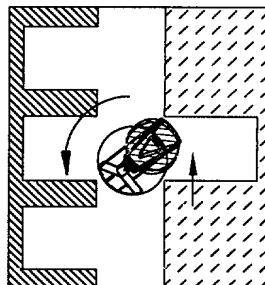
wall for process
to complete

FIG. 28-6



swap processed
wafer for new
wafer ready
for process

FIG. 28-7



retract radical
axis. move X and Theta

FIG. 28-8





Title: SEMICONDUCTOR MATERIAL HANDLING SYSTEM
Inventor: Anthony C. Bonora Docket No.: 34741-774
Serial No.: 10/087,092 Attorney: Scott D. Sanford
Filed: March 1, 2002 Telephone: 415-984-8700
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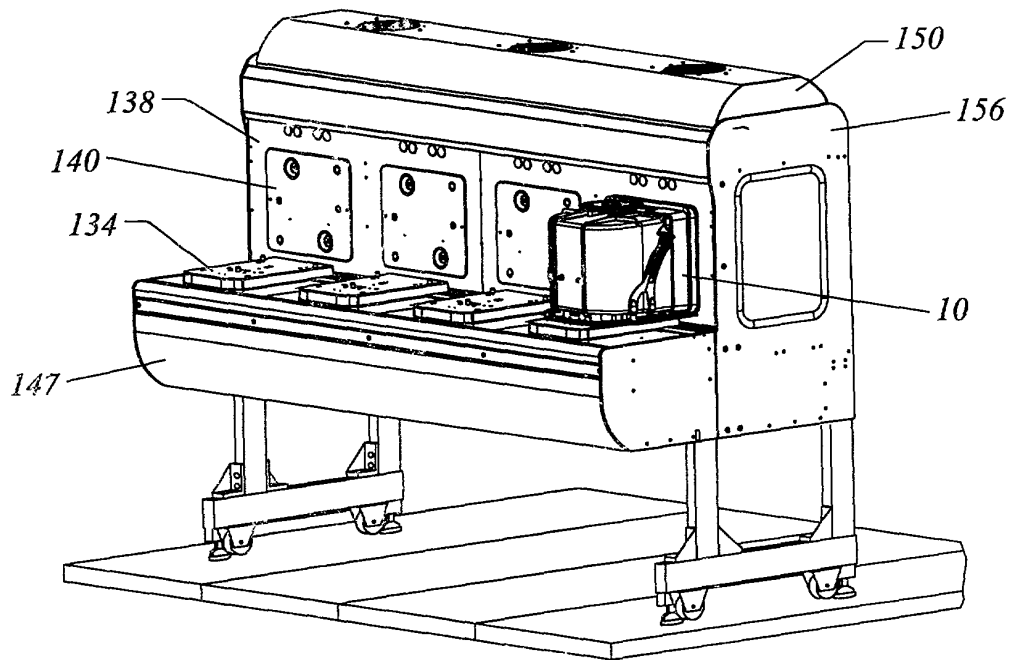


FIG. 29A

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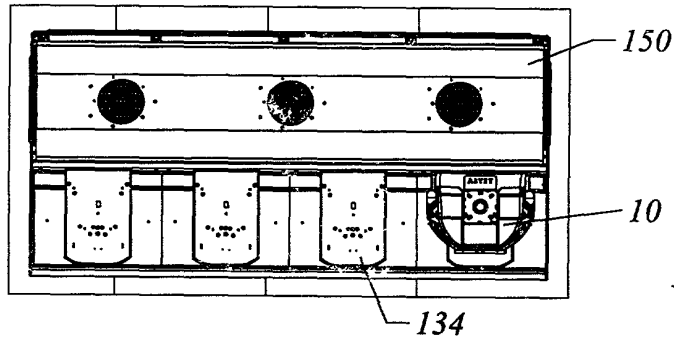


FIG. 29D

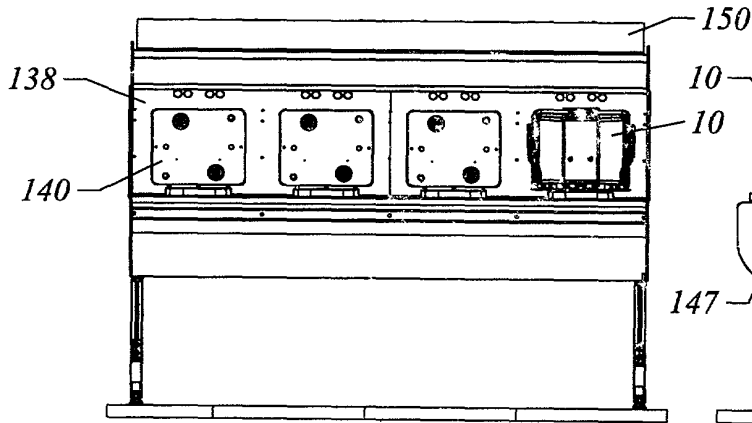


FIG. 29B

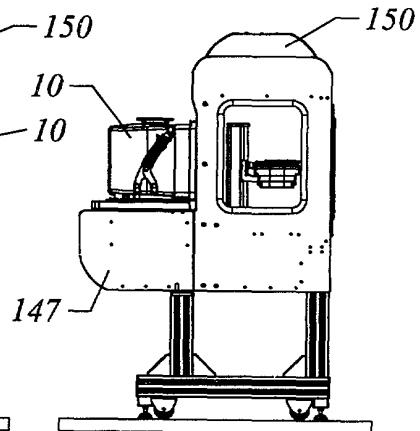


FIG. 29C

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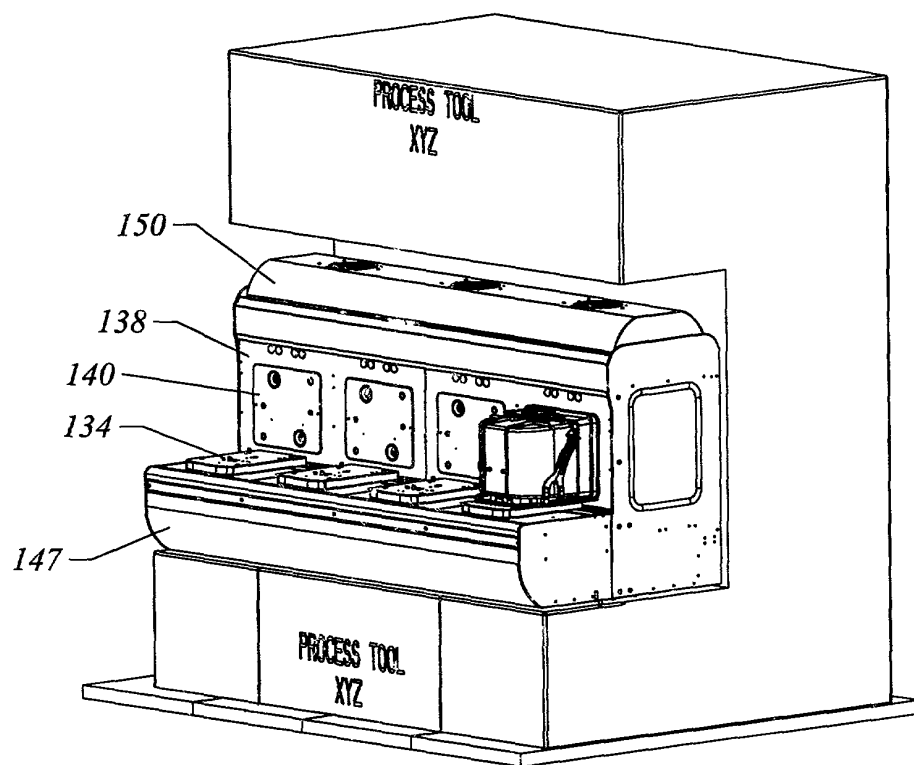


FIG. 30A



Title: SEMICONDUCTOR MATERIAL HANDLING SYSTEM
Inventor: Anthony C. Bonora Docket No.: 34741-774
Serial No.: 10/087,092 Attorney: Scott D. Sanford
Filed: March 1, 2002 Telephone: 415-984-8700
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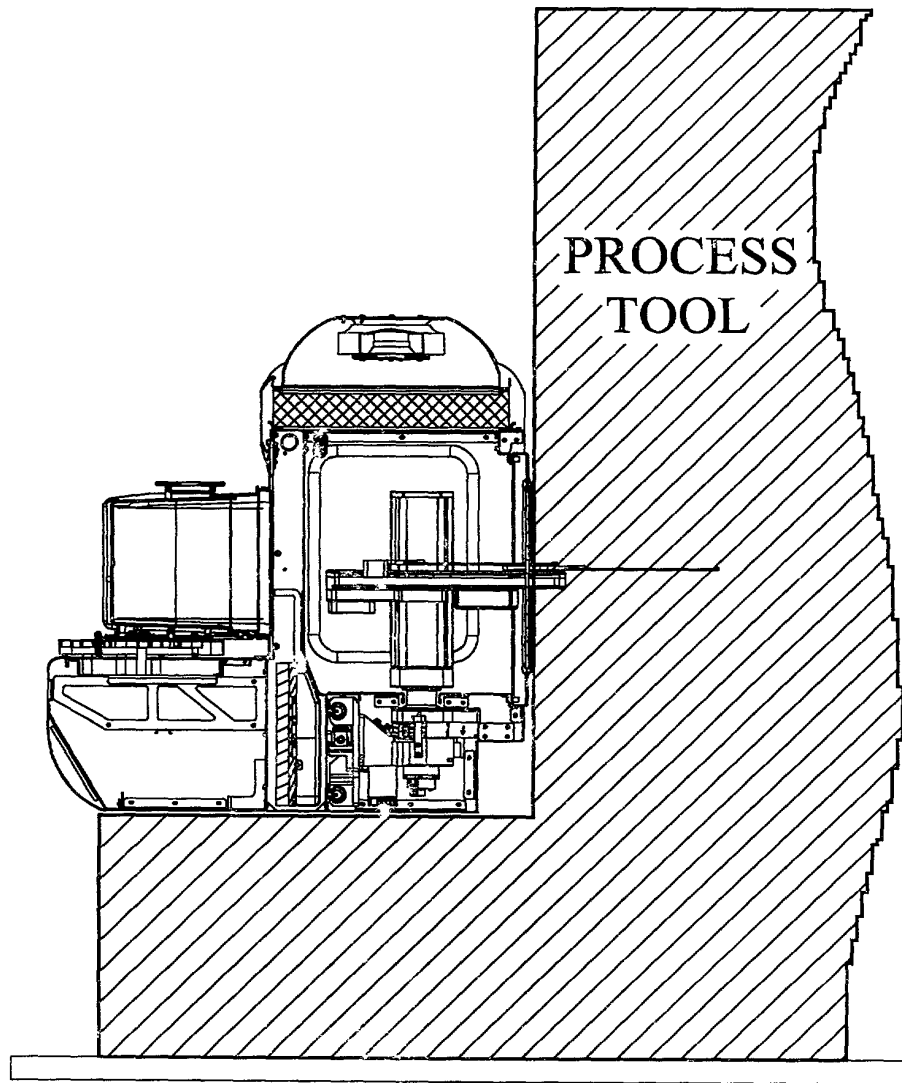


FIG. 30B

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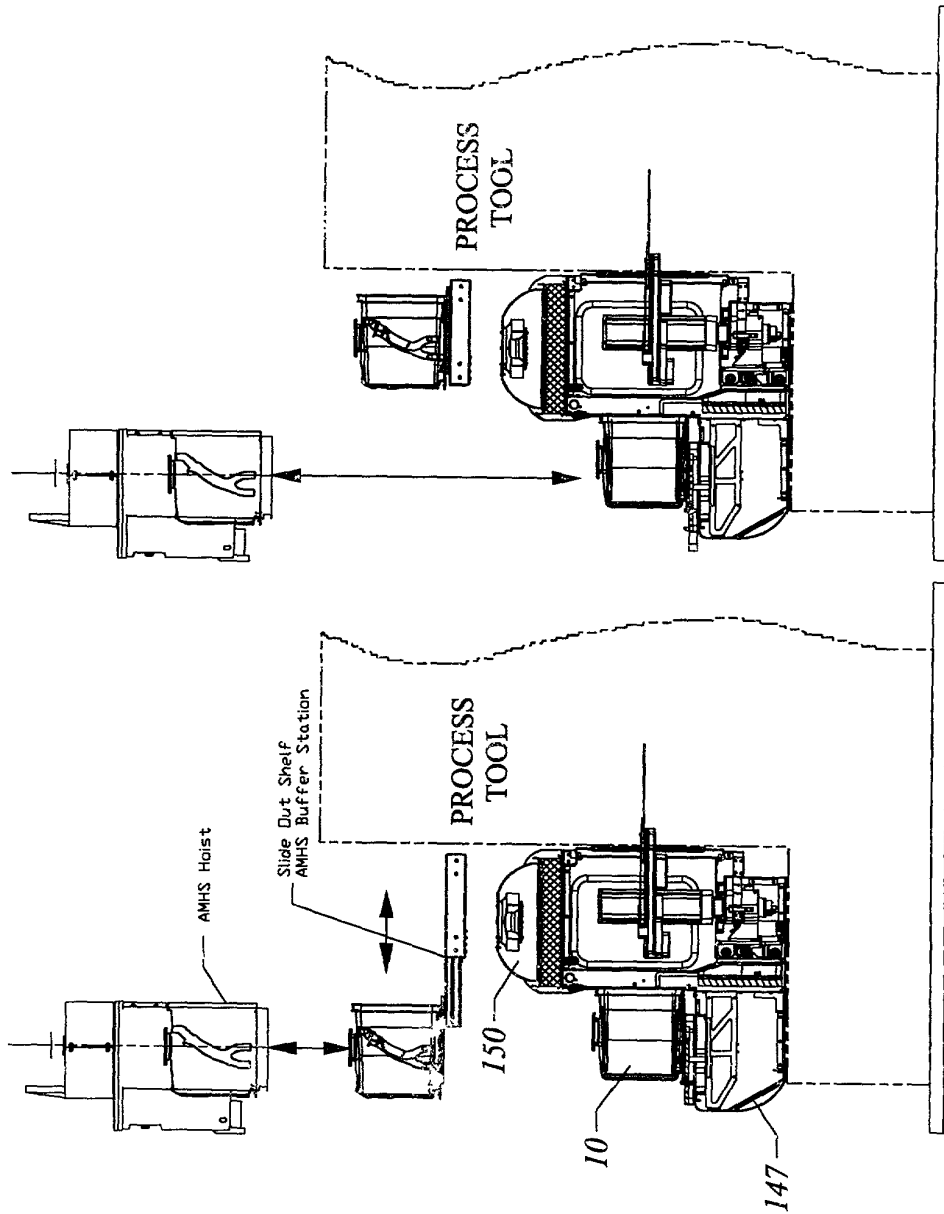


FIG. 31